

# Status of CHP Efforts in the U.S.

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Southeast CHP Initiative

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# Overview

- Why we are here
- CHP Vision and Technology Roadmap
- 4<sup>th</sup> Annual CHP Roadmap Workshop – 10/03
- U.S. DOE Peer Review – 12/03
- Major Policy Efforts
  - Interconnection
  - Energy Bill
- Regional Activities



# Why Are We Here?

- **Rising Concerns Over**
  - **Blackouts/Brownouts**
  - **Power Supply Constraints (Aging infrastructure)**
  - **Electricity Prices**
  - **Environment**
  - **Power Security**



# Selected Power Outage Costs

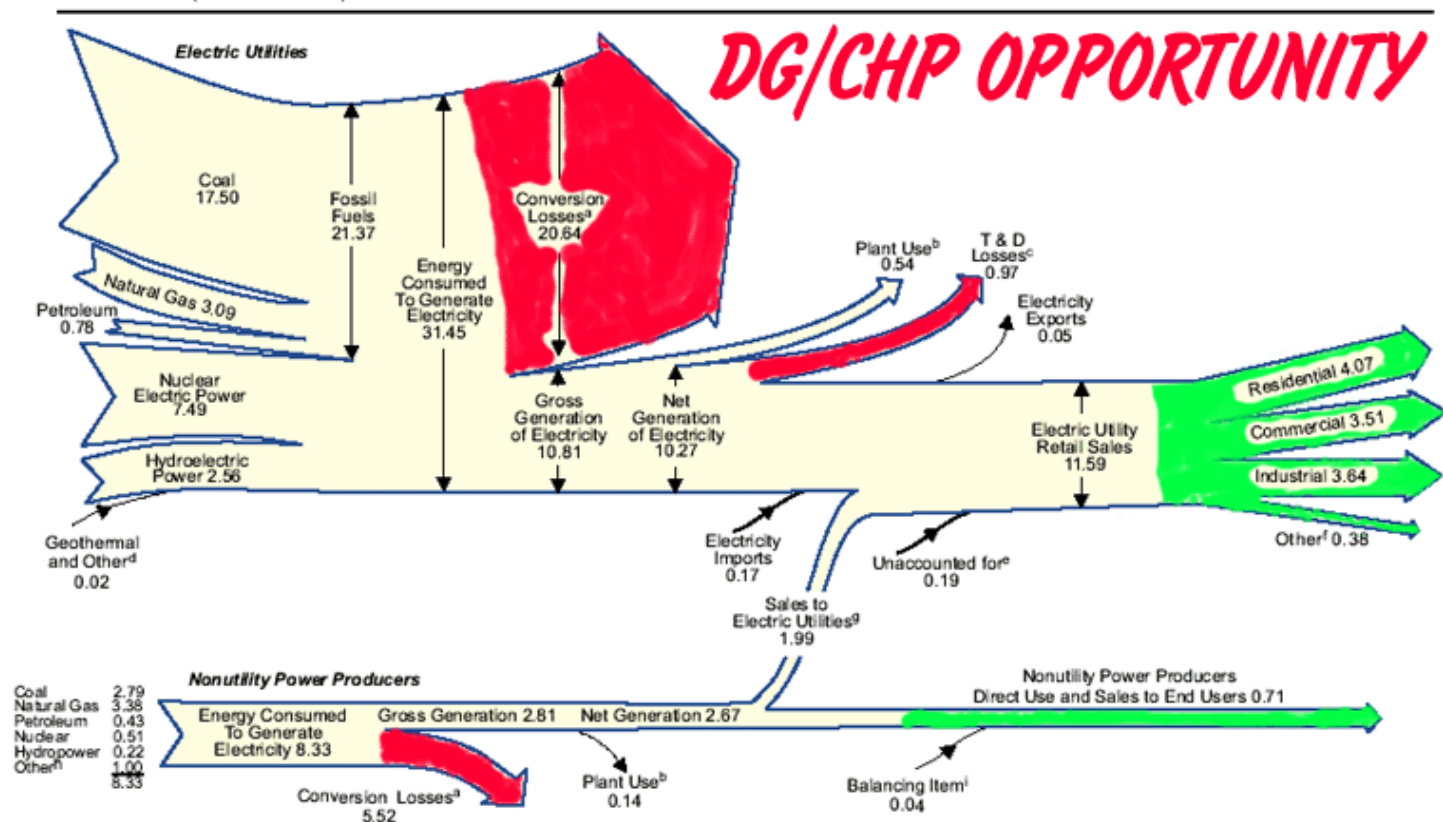
Industry	Avg. Cost of Downtime
<b>Cellular Communications</b>	<b>\$41,000 per hour</b>
<b>Telephone Ticket Sales</b>	<b>\$72,000 per hour</b>
<b>Airline Reservations</b>	<b>\$90,000 per hour</b>
<b>Credit Card Operations</b>	<b>\$2,580,000 per hour</b>
<b>Brokerage Operations</b>	<b>\$6,480,000 per hour</b>



# Can this be true?

**Diagram 5. Electricity Flow, 2000**  
(Quadrillion Btu)

From Energy Information Agency, USDOE, 2000 Annual Energy Review



# Benefits of CHP

- **Conservation of Natural Resources**
- **Addresses Environmental Concerns**
  - High efficiencies currently only existing way to reduce carbon emissions and work to meet Kyoto accords
  - Facilitates deployment of new clean energy technologies
- **Can be used to improve grid utilization and improve Power Security**
  - Improve end-user power reliability
  - Improve grid reliability / supplement aging areas of grid
  - Reduce peak power load demand on grid
  - Provide high reliability power to Mission Critical Functions

**Lower overall energy costs**



# Government Commitment

- **President Bush's National Energy Policy**
- **U.S. DOE's CHP Challenge**
  - **Double CHP in U.S. by 2010**
  - **U.S. DOE / U.S. CHPA / U.S. EPA roadmap**
- **U.S. EPA CHP Partnership**



# U.S. DOE CHP Vision and Technology Roadmap

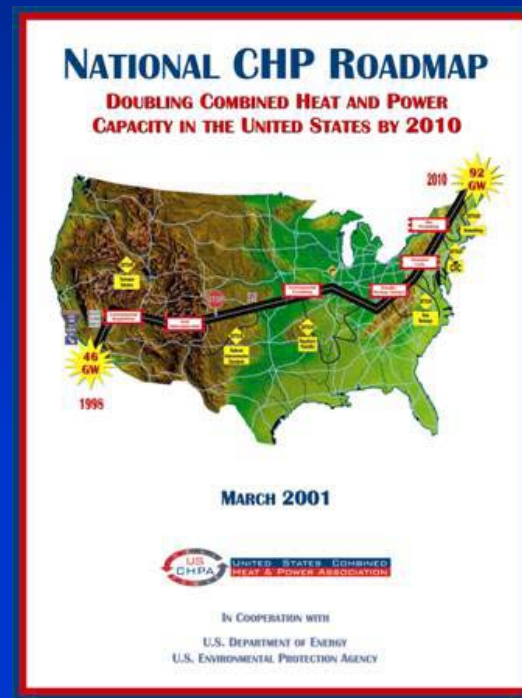
By 2010, **double** the amount of CHP capacity in the United States

1998, 46GW



2010, 92GW

Our CHP activities are guided by the actions identified in the National CHP Roadmap as those items required of us to meet the CHP Goal



- Raise CHP Awareness
- Eliminate Regulatory and Institutional Barriers
- Develop CHP Markets and Technologies





# 4th Annual CHP Roadmap Workshop


- **September 22-24, Chicago, IL – 200 attendees**
- **Highlights** (presentations at [www.uschpa.org](http://www.uschpa.org))
  - **Where we are on the Road to 92 GWs**
  - **Regional CHP Success & Initiative Roundtable**
  - **Breakout Sessions (Utility Issues, Environmental Issues, CHP Markets and Technologies)**
  - **Key Issues**
    - » **Presentation on NG Impact of Increased CHP**
      - **Energy and Environmental Analysis, Inc.**
  - **Rollout of CHP Branding Campaign**
  - **Next Meeting – September, 04 – tentatively Austin, Texas (in conjunction with AEE mtg)**



# Branding Campaign Rollout - LOGO



# Finished Art Direction Options




**Wishing Is Not A Strategy.**

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**Implement CHP  
And Increase Your  
Energy Security.**

Simply put, CHP can provide power to your facility when others can't. It's your best insurance policy against black-outs or other interruptions in power.

At the same time, CHP will lower your energy costs and significantly reduce the impact of power generation on the environment. To learn more visit us at [www.chp.com](http://www.chp.com)



# Finished Art Direction Options




**Peak Performance.**


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**Hospitals And Healthcare  
Facilities Nationwide Are  
Implementing CHP To Reach  
Peak Energy Efficiency.**

Discover how more than 200 hospitals and healthcare facilities nationwide are using CHP to decrease power outages and interruptions by up to 95% and lower energy costs by up to 50%. Visit [enr.com](#) to learn more.



# Finished Art Direction Options




**It Takes A Leader.**

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**Discover How CHP Can  
Take Power Reliability  
To New Heights.**

By making CHP part of the energy mix, we can provide back up energy for greater security and safety during power outages. CHP can provide heating and cooling for the elderly. Keep elevators and water running. And do it in a way that reduces the impact of power generation on the environment. With the right leadership, we can take the energy infrastructure to new heights.



# U.S. DOE DER Peer Review

- **December 2-4, Washington, DC**
- **Highlights**  
([http://www.eere.energy.gov/der/der\\_review\\_03.html](http://www.eere.energy.gov/der/der_review_03.html))
  - **Integrated Energy Systems developing Packaged Systems for deployment late '04**
  - **Microturbine, Thermally Activated Technology, and Advanced Reciprocating Engine Programs on target for meeting goals**
    - » **Products improving with new releases over the next few years**
  - **End-Use System Application Programs making an impact**
    - » **Regional Initiatives and Application Centers**
    - » **Focused efforts on Hospital and Industrial Markets**
    - » **National Accounts Alliance**
    - » **DER Road Shows**



# Major Policy Efforts

- **Interconnection**
  - **IEEE 1547 – Issued June 2003**
  - **Now working on Guidance Documents**
    - » **P1547.1 – Draft Conformance Test Procedures**
    - » **P1547.2 – Draft Application Guide**
    - » **P1547.3 – Draft Guide for Monitoring and Control of DR interconnected with EPS**
  - **FERC NOPR on Small Generation Interconnection**
    - » **Not positive for CHP**
    - » **Comments issued by Small Generation Coalition (USCHPA)**





# Major Policy Efforts

- **Energy Bill** (see [uschpa.org](http://uschpa.org))
  - **Positive Provisions for CHP**
    - » **Tax Credit**
    - » **PURPA Preservation**
    - » **Low Income Community Energy Efficiency Pilot Program**
    - » **Advanced Power System Technology Program**





# Regional Initiative and Application Center Efforts

- **Midwest – Initiative and AC** ([www.chpcentermw.org](http://www.chpcentermw.org))
  - **Meetings every two months**
    - » **Meeting at different states to develop state CHP Development Plans**
  - **Meetings with Midwest Commerce Commissions**
    - » **Interconnection**
    - » **Tariffs**
    - » **State Specific Interconnection Standards**
  - **Market Development Efforts**
    - » **Working with ORNL on Hospitals**
    - » **Effected over 100 MWs of Generation**
  - **Tool Development**
    - » **CHP Training Courses**
    - » **Environmental Permitting Guideline**
    - » **CHP Resource Guidebook**



# Regional Initiative and Application Center Efforts

- **Northeast Regional Initiative and AC**
  - Meeting every two months
  - Engaged with Developing State I/C standards – NY, MA, and CT
  - Engaged with comments on new Tariff Proposals
  - Starting up new Application Center – engaging all State Energy Offices for input
- **Northwest Regional Initiative and AC**
  - Developed Roadmap for Industrial Applications
  - New Application Center – All State Energy Offices involved
  - Regular Meetings



# Regional Initiative and Application Center Efforts

- **Other Initiative and Application Center Startup Efforts**
  - **Pacific RAC and Initiative**
    - » **Roadmap workshop in January at CADER Meeting**
  - **Mid-Atlantic RAC and Initiative**
  - **Intermountain RAC and Initiative**
- **Coordination efforts**
  - **Monthly Initiative Calls (Terri Roberts)**
  - **Quarterly RAC Calls (Terri Roberts)**



# Summary

- **US DOE and EPA engaged to support and develop CHP market**
  - **Reliability and Efficiency is key**
- **NATIONAL ROADMAP Process has been key**
  - **Regional Initiatives key to success of roadmap**
  - **Review Roadmap update document when issued to identify key Regional Actions**
  - **Branding Campaign ready for implementation**
- **US DOE Technology Development Programs developing products key for Southeast – Cooling, Heating, and Power Systems**
- **End Use Applications can be coordinated for SE Input**
- **Policy Efforts on Interconnection and Energy continue to facilitate CHP development**
- **Regional Initiatives and ACs in Action to Develop Market**
  - **USDOE Still open to additional RACs**



# QUESTIONS?

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